Christie Matrix Series

Civil aviation and transportation
Education and training
Military and defense

True-to-life performance you can count on

As solution experts and innovators in simulation technology, Christie® has developed the Matrix Series of DLP® projectors for the most demanding simulation and training applications. Get equipped to deliver on your training goals with scalable system resolution and the highest update rates available to provide superior image fidelity. Tap into the unique capabilities, including true 120Hz operation for maximum dynamic image quality and the ability to project an independent infrared channel to stimulate operational night vision devices.

You have the choice of solid-state and lamp-based 1DLP and 3DLP technologies to meet your requirements – for front- or rear-projection; spherical, cylindrical, conic or flat screens; and from small, transportable part-task trainers to large-scale dome configurations for full-mission simulators.

The Christie Matrix Series includes a full suite of integration tools, features and technologies that provide ease of installation, ease of use and ease of maintenance – reducing your total cost of operation. The result is a fully integrated, highly scalable projection system that offers unrivaled performance, stability and reliability.

Christie – changing the way you view simulation.

CHRISTIE®

Christie Matrix Series

With numerous successful application solutions in the simulation industry, Christie® has accumulated a wealth of experience and a clear understanding of the challenges that are unique to creating real-world simulated environments. We've engineered the Christie Matrix Series to offer advanced capabilities that address automatic calibration, geometric accuracy, high-quality image warping and blending, resolution, color and brightness uniformity, update rates, latency and motion-platform compatibility – key criteria when designing integrated simulation display solutions.

When you need to scale displays into large integrated arrays to achieve high-resolution and consistent image quality over wide fields of view, you can count on the Matrix Series.

Christie Matrix StIM and Christie Matrix SIM

With 1DLP® solid state technology, the WUXGA-resolution Christie Matrix StIM™ and Christie Matrix SIM offer unmatched system stability and reliability. Using Christie ArrayLOC™, these intelligent projection systems automatically balance both color and brightness levels in real-time. Unique to the Matrix StIM and Matrix SIM is the separate electronics module for optional remote mounting. With this modular design, a small footprint and unrestricted orientation mounting, the Matrix StIM and Matrix SIM provide excellent flexibility in system design. No color wheel and no lamps mean that there are no consumables for a virtually maintenance-free system, years of continuous operation and an extremely low sustainment cost.

The Matrix StIM provides independent channels and control over both the visible and infrared spectrum using Christie InfraScene™. This enables realistic night vision training by stimulating Night Vision Goggles (NVGs). For commercial aviation and other training applications that don't require NVG stimulation, the Matrix SIM is an ideal choice. This projector meets FAA Level D requirements for Full Flight Simulators (FFS) and has a proven track record of success on commercial simulators.

Christie Matrix StIM WQ and Christie Matrix SIM WQ

For higher brightness and resolution display of content in rigorous training environments, you can rely on the Christie Matrix StIM WQ or the Christie Matrix SIM WQ. These are WQXGA-resolution, scalable-environment, 1DLP, solid-state-illuminated projection systems, with Christie AccuFrame™ advanced smear reduction technology and a motion-platform-compatible, ruggedized chassis that can withstand up to a 5g shock load. On the Matrix StIM WQ and Matrix SIM WQ, Christie AccuFrame is fully adjustable in 1% increments, allowing system designers to maximize dynamic image quality over a range of frame rates and training scenarios for the most realistic displays. Both projectors exceed FAA Level D standards for commercial flight simulators.

The Matrix StIM WQ is the first WQXGA projector on the market that displays separate channels for visible light and infrared spectrum using Christie InfraScene, and delivers true 120Hz RGB operation. All of this results in the most true-to-life image quality in the simulation industry.

Christie Matrix J Series

If you're looking for a 3DLP projector designed specifically for simulation and training, the Christie Matrix J Series offers the highest performance with unsurpassed color accuracy and adjustability. With over 650,000 hours Mean Time Between Failure (MTBF) on each DMD, these Xenon lamp-based, DLP projection systems offer a stable, durable platform. Long lamp life and low replacement lamp costs contribute to less downtime and a low cost of operation. Matrix J Series projectors are available in brightness levels exceeding 6300 ANSI lumens and two resolutions: SXGA+ and WUXGA. As with all Matrix projectors, the Matrix J Series has built-in high-quality warping and edge blending capabilities using Christie Twist™. It also has the ability to integrate with Christie AutoCal™ for full scalability to support large, multi-channel arrays. Powered by dual-image processing, the Matrix J Series displays full resolution at 120Hz for optimum dynamic image quality.

Advanced features

Christie MotoBlend

Developed using our extensive experience with dynamic content, Christie® MotoBlend™ provides motorized optical blending to ensure seamless blends, optimized for night training applications.

Christie ArrayLOC

Christie ArrayLOC™ manages the brightness and color levels of all Matrix solid-state projectors within an array to a common level, in real-time and with no additional latency. Synchronized color and brightness level balancing self-adjusts, reducing the time, labor and costs associated with maintaining a simulation display.

Christie AccuFrame

Christie AccuFrame™ reduces perceptible image smearing to accurately display dynamic simulation content for the most true-to-life imagery. Fully adjustable to support various frame rates and training environments, all Matrix Series projectors come standard with Christie AccuFrame.

Christie AccuFrame Pro

Christie AccuFrame Pro is a first-of-its kind technology to reduce motion blur and negative training while maintaining brightness levels. AccuFrame Pro is compatible with the Christie Matrix StIM WQ and Christie SIM WQ projectors as an optional upgrade.

▲ With Christie AccuFrame.

▲ Without Christie AccuFrame.

An array of three Christie Matrix StIM's provides a 240° horizontal field of view (FOV) at RAF Valley, United Kingdom. Christie MotoBlend optimizes life-like images of both day and night and Christie Twist generates the warp profile – the net result is a seamless image blend across the array of projectors. The Matrix StIM's have provided the ability to train for day- and night-time, bad weather scenarios and contributed to a greatly enhanced helicopter search and rescue training experience, enabling trainees to see exactly what the pilots see in real-world missions.

Christie AutoCal

Christie AutoCal™ calibrates any arrayed projection display – from flat to cylindrical to spherical – adjusting it to its optimized viewing configuration. With automated image display adjustment capabilities at your fingertips, a stabilized, consistent display with reduced system maintenance and downtime will help you increase productivity.

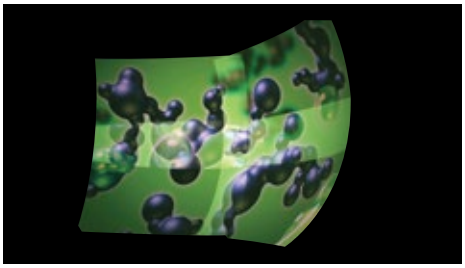
Christie Twist

An easy-to-use option to manage arrayed projectors, Christie Twist™ allows pixels to be mapped to any projection surface with proper geometry and accurate pixel-to-pixel alignment. Christie Twist provides the high-quality warping and blending required for arrayed projectors to operate as a single, uniform display with maximum image quality and minimum system latency.

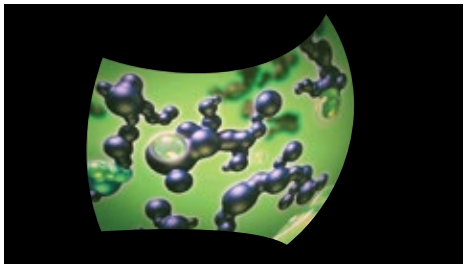
Minimum Processing Latency

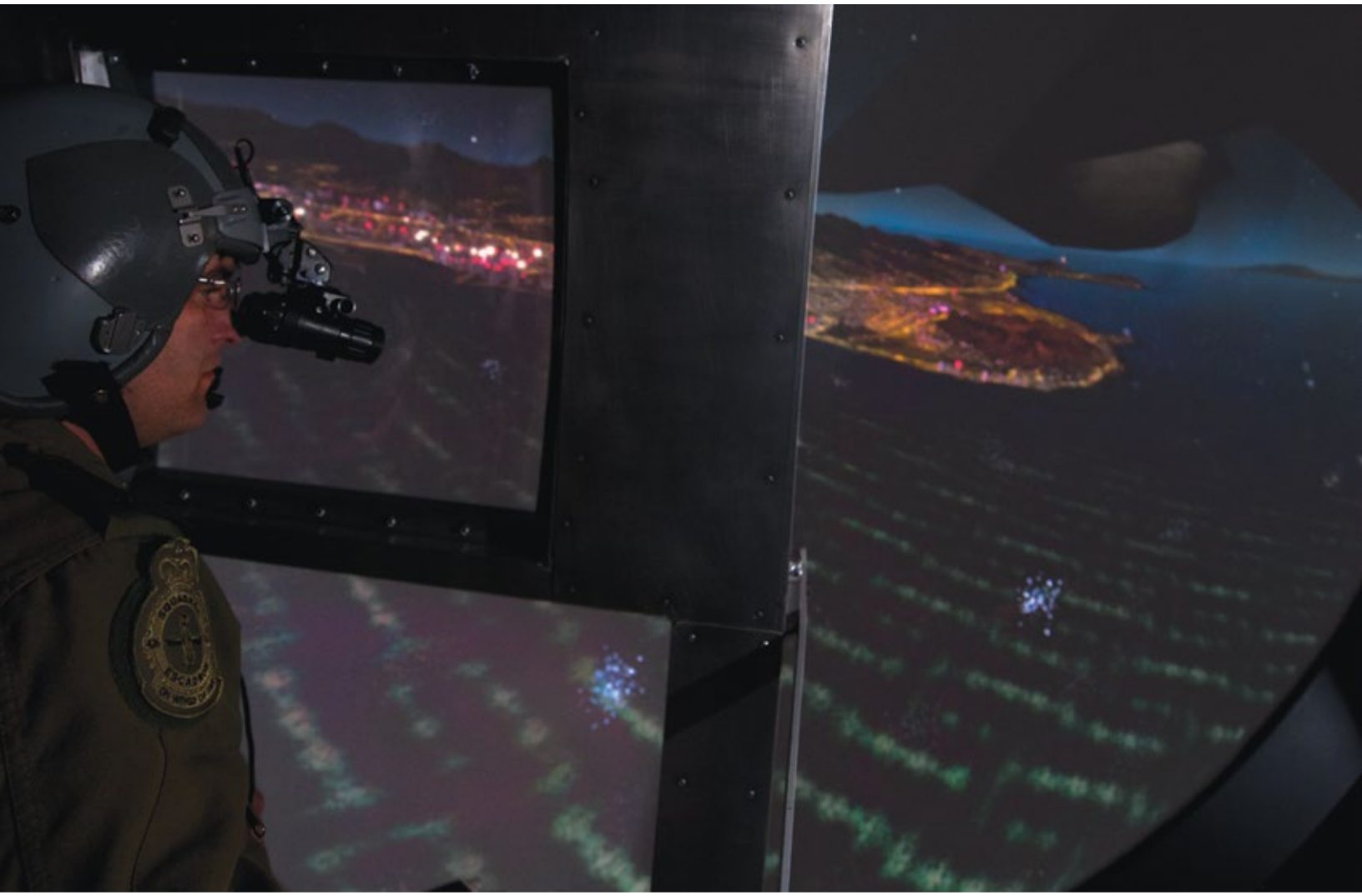
With Minimum Processing Latency (MPL™), there is less than a single frame of latency between projector input and display. The result is the realistic, real-time performance needed to simulate highly-dynamic environments.

▲ Christie Edgeless Graphics Geometry (EGG) – 16 megapixel, 240-degree field of view display featuring Christie AutoCal, Christie Twist and Christie Matrix StIM.



▲ Christie Twist offers high-quality warping and blending for exact geometric mapping regardless of the shape or surface.





Engineered for simulation and training

Pioneering true-to-life stimulated NVG training

With their unique dual-input architecture, and using Christie® InfraScene™, the Christie Matrix StIM™ and Christie Matrix StIM WQ use separate channels for visible light and near-infrared spectrum for a more realistic Night Vision Goggle (NVG) training experience. In addition to the red, green and blue primaries, Christie InfraScene uses a separate infrared channel to stimulate operational NVGs. With Christie InfraScene, these projectors accurately depict day and night scenes, as well as independent stimulated NVG images, enabling realistic and relevant training for difficult conditions of limited visibility and nighttime operations.

Christie was the first to bring this technology to market with the Christie Matrix StIM. The next evolution is the Christie Matrix StIM WQ which is the world's first projector to provide stimulated NVG images at WQXGA resolution for enhanced training quality. The Christie Matrix StIM WQ also offers a new capability – allowing users additional control to optimize the separate visible and IR scenes, based on specific training requirements.

Service and support

Christie understands that each customer has unique business challenges and technical requirements. Our proven installation process is based on years of successful installations around the world. We use ISO-certified project management practices – from engineering services such as consulting and design, to installation, integration and complete training and support. We'll take your project from inception to completion – on schedule, on budget, to specification and with proven reliability.

◀ Defence Research and Development Canada and the Canadian Forces Aerospace Warfare Centre have partnered to advance training methods for the Royal Canadian Air Force. Recently they improved their state-of-the-art Hercules Observer Trainer (HOT) and incorporated NVG training capability by adding two Christie Matrix StIM projectors.

▶ The motion platform at Royal Naval Air Station (RNAS) Culdrose, United Kingdom – The ruggedized chassis of all Matrix Series projectors ensures system stability in motion environments.

Maximizing image quality for real-world simulation content

The Matrix StIM, Matrix StIM WQ and Matrix J Series projectors use their unique, dual-input architecture to provide the ability to composite the two 60Hz RGB inputs to deliver true 120Hz RGB operation. This results in dramatically improved dynamic image quality and resolution without image artifacts or perceived loss of brightness, while maintaining compatibility with current Image Generator technology and without having to change the visual database.

Designed for simulation motion environments

All Christie Matrix Series projection systems are built to order and can be supplied with a fully ruggedized chassis to withstand the shock loads associated with motion platform use for extreme system stability.

Corporate offices

Christie Digital Systems USA, Inc.
Cypress
ph: 714 236 8610

Christie Digital Systems Canada Inc.
Kitchener
ph: 519 744 8005

Independent sales consultant offices

Italy
ph: +39 (0) 2 9902 1161

Worldwide offices

Australia
ph: +61 (0) 7 3624 4888

Brazil
ph: +55 (11) 2548 4753

China (Beijing)
ph: +86 10 6561 0240

China (Shanghai)
ph: +86 21 6278 7708

France
ph: +33 (0) 1 41 21 44 04

Germany
ph: +49 2161 664540

India
ph: +91 (080) 6708 9999

Japan (Tokyo)
ph: 81 3 3599 7481

Korea (Seoul)
ph: +82 2 702 1601

Mexico
ph: +52 55 4744 1790

Republic of South Africa
ph: +27 (0)11 510 0094

Russian Federation
Eastern Europe
ph: +36 (0) 1 47 48 100

Singapore
ph: +65 6877 8737

Spain
ph: +34 91 633 9990

United Arab Emirates
ph: +971 4 3206688

United Kingdom
ph: +44 (0) 118 977 8000

United States (Arizona)
ph: 602 943 5700

United States (New York)
ph: 646 779 2014

ISO 9001
ISO 14001
Kitchener, Ontario

For the most current specification information, please visit www.christiedigital.com

Printed in Canada on recycled paper. 4183 Nov 15

CHRISTIE®